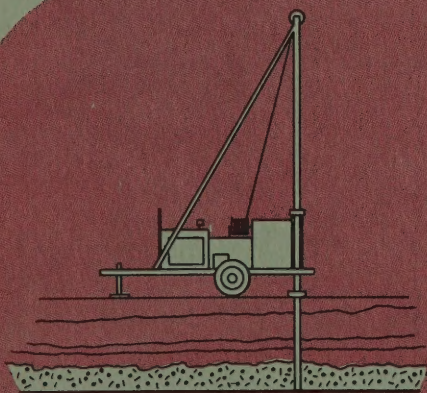
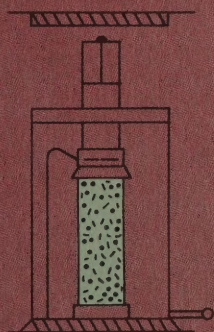


STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION



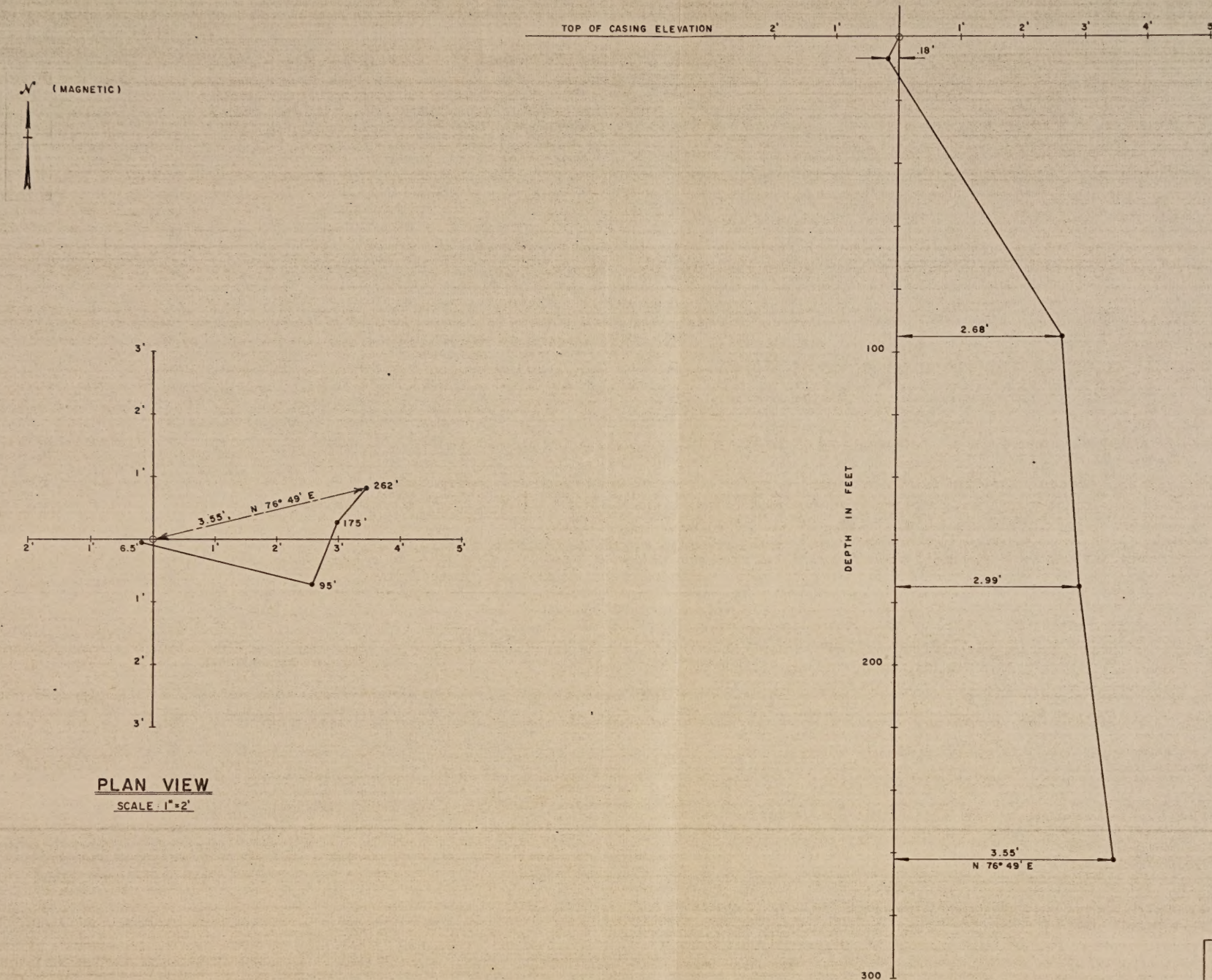
SOIL MECHANICS
BUREAU



REPORT OF TELEVISION BOREHOLE SURVEY
OF A WELL
AT THE PATTERSONVILLE SERVICE AREA
ON THE NEW YORK STATE THRUWAY

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Fig. 2

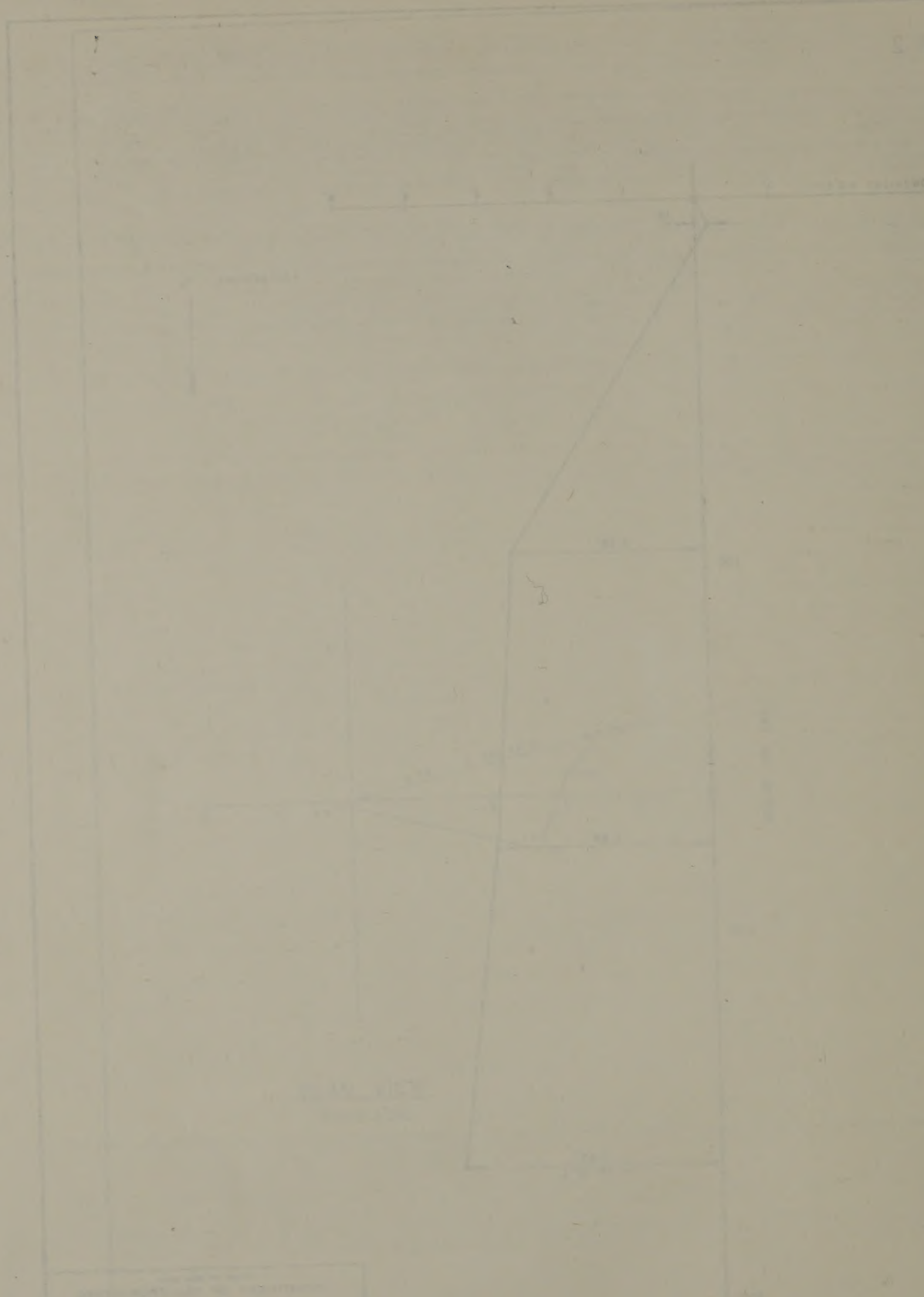


PLAN VIEW
SCALE: 1" = 2'

VERTICAL PROJECTION

SCALE
HORIZONTAL: 1" = 2'
VERTICAL: 1" = 40'

STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION BUREAU OF SOIL MECHANICS	
N.Y.S. THRUWAY AUTHORITY PATERSONVILLE REST AREA HOLE DRIFT - NEW WELL	
APPROVED	DISTRICT NO.
DIRECTOR	COUNTY
	DRAWING NO. SM



NATIONAL BUREAU OF AERONAUTICS WASHINGTON, D. C.	
REPORT NO. 1081 RESEARCH MEMORANDUM	
TITLE AERODYNAMIC ANALYSIS OF AERIAL PROJECTION	
AUTHOR H. G. GORTON	PERFORMING ORGANIZATION NATIONAL BUREAU OF AERONAUTICS
DISTRIBUTION STATEMENT UNCLASSIFIED	DATE 1955

AERIAL PROJECTION
 H. G. GORTON
 NATIONAL BUREAU OF AERONAUTICS
 WASHINGTON, D. C.

June 18, 1969

Mr. Belmont M. Williams PROJECT: Water Well
Chief Engineer Pattersonville
N.Y.S. Thruway Authority Service Area
P.O. Box 189
Albany, New York 12201

Dear Mr. Williams:

Herewith is a report, prepared by Francis R. Irving, Senior Engineering Geologist, on the findings of the television borehole camera survey made of the well at the Thruway Authority's Pattersonville Service Center.

Very truly yours,

Wm. P. Hofmann

Wm. P. Hofmann, Director
Bureau of Soil Mechanics

Francis R. Irving
Senior Engineering Geologist

FRI:B

cc: Mr. G. W. McAlpin

June 18, 1969

PROJECT: Water Well
Pattersonville
Service Area

Mr. Belmont M. Williams
Chief Engineer
N.Y.S. Thruway Authority
P.O. Box 139
Albany, New York 12201

Dear Mr. Williams:

Herewith is a report, prepared by Francis R. Irving, Senior Engineering Geologist, on the findings of the television borehole camera survey made of the well at the Thruway Authority's Pattersonville Service Center.

Very truly yours,

John F. Hoffmann

John F. Hoffmann, Director
Bureau of Soil Mechanics

cc: Mr. C. W. McAlpin
FRI:8

BOREHOLE TELEVISION SURVEY

Pattersonville Service Area - N.Y.S.T.A.

A borehole television camera survey of the second of two existing wells was conducted by personnel from the Bureau of Soil Mechanics on April 20, 1969, at the Pattersonville Service

Area of the New York State Thruway. The survey was conducted

REPORT OF TELEVISION BOREHOLE SURVEY

at the request of Mr. Belmont Williams, Chief Engineer of the
OF A WELL

Thruway Authority.

AT THE PATTERSONVILLE SERVICE AREA

The well surveyed, the newer one of the two wells at this location at the Pattersonville Service Area, is 490 feet deep. The top of bedrock is approximately four feet below the present top of the eight-inch casing. The casing is set into rock approximately 92 feet. The well log, taken from the log received from the Thruway Authority, is included as Figure 1.

By

This well has a history of silt in the water, reportedly increasing after heavy rains. Recently an attempt was made to insert a seal below the Francis R. Irving. This seal was close to eight inches in diameter and attached to a six-inch pipe. The seal could not be pushed past about 20 feet.

The Borehole Television Camera Survey was made (1) to determine the reason for the buildup of the seal and (2) to determine, if possible, the source of the silt. The T. V. probe was lowered to a depth of 245 feet, with the T. V. Screen and the inclinometer monitored continuously during the lowering and raising of the probe.

June 18, 1953

REPORT OF TELEVISION BROADCAST SURVEY
AT THE HATTESVILLE SERVICE AREA
BY A WELL

ON THE NEW YORK STATE THRUWAY

This is a report, prepared by Francis A. Irving, Senior Engineering Geologist, on the findings of the television broadcast survey made of the well at the Thruway Authority's Hattessville Service Area.

Very truly yours,

Francis A. Irving

Mr. F. A. Irving, Director
Bureau of Soil Conservation

Francis A. Irving
Senior Engineering Geologist

WELL
NO. 1, N. Y. Thruway

BOREHOLE TELEVISION SURVEY

Pattersonville Service Area - N.Y.S.T.A.

A borehole television camera survey of the second of two existing wells was conducted by personnel from the Bureau of Soil Mechanics on April 20, 1969, at the Pattersonville Service Area of the New York State Thruway. The survey was conducted at the request of Mr. Belmont Williams, Chief Engineer of the Thruway Authority.

The well surveyed, the newer one of the two wells at this service area, is 490 feet deep. The top of bedrock is approximately four feet below the present top of the eight-inch casing. The casing is set into rock approximately 92 feet. The well log, taken from the log received from the Thruway Authority, is included as Figure 1.

This well has a history of silt in the water, reportedly increasing after heavy rains. Recently an attempt was made to insert a seal below the eight-inch casing. This seal was close to eight inches in diameter and attached to a six-inch pipe. The seal could not be pushed past about 20 feet.

The Borehole Television Camera Survey was made (1) to determine the reason for the hangup of the seal and (2) to determine, if possible, the source of the silt. The T. V. probe was lowered to a depth of 265 feet, with the T. V. Screen and the inclinometer monitored continuously during the lowering and raising of the probe.

RESEARCH REPORT

U.S. GEOLOGICAL SURVEY - BUREAU OF MINERAL RESOURCES

A detailed geological survey of the area is being

conducted by the Bureau of Mineral Resources

and is being completed by the end of the year.

The survey is being conducted by the Bureau of Mineral Resources

and is being completed by the end of the year.

U.S. GEOLOGICAL SURVEY

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U.S. GEOLOGICAL SURVEY

The reason for the hangup is evident in the accompanying drawing (Fig. 2). According to Mr. Paul H. Bird of this Bureau, "This well went off plumb soon after it was started." Attempts made to straighten it with wedges on the way down resulted in the corkscrew pattern shown in Fig. 2. The reverse bend at six feet was probably made in an attempt to straighten the casing after it was seated. There are twelve threads of the coupling visible at this joint. The joint is about one foot below the bottom of the 12-inch casing and two and a half feet below the top of rock. The seal on the six-inch pipe passed this bend but eventually hung up because of friction at three points: (1) between the seal and the side of the casing below the bend at six feet, (2) the sides of the six-inch pipe rubbing against the bend, and (3) against the top of the casing opposite the bend.

The source of the silt is a more difficult problem. The possibilities are:

1. A crack in the casing,
2. seepage around the casing,
3. gouge clay from a fault below the casing, or
4. insoluble residue from solution channels in the rock.

The casing appears intact except for the joint at six feet where approximately one inch of threads are exposed. Leakage here, near the top of rock, would agree with the report of increased silt after heavy rainfalls. Since the seal can be inserted

The second and third parties are also in the same position.

According to the report of the first of these parties,

This will not be done until it is decided by the court.

The court has decided that the first party is not entitled to

the same position as the second and third parties.

It was probably made in an attempt to establish the case

that the first party is not entitled to the same position as

the second and third parties. The court has decided that the

first party is not entitled to the same position as the second

and third parties. The court has decided that the first party

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entitled to the same position as the second and third parties.

The court has decided that the first party is not entitled to

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1. A court in the same position.

2. A court in the same position.

3. A court in the same position.

4. A court in the same position.

5. A court in the same position.

The court has decided that the first party is not entitled to

the same position as the second and third parties.

The court has decided that the first party is not entitled to

below this point, a pumping test could be run to determine if this is the source.

The casing appeared to be well seated. The rock below the casing was fractured for a few inches because of the impact of the casing. However, there did not appear to be anything abnormal here.

Major faults cross the Mohawk Valley both east and west of this site. The fault at Hoffman's is quite close. The possibility of minor related faults at the actual site is high. No faulting was noted between the bottom of the casing and the 265 foot level, the maximum depth to which the T. V. probe was lowered. However, two notes on the accompanying driller's log may indicate fault zones. The upper one, "yellow silt" from 88 feet to 101 feet, is cased off. The lower one, "decomposed granite" from 297 feet to 318 feet, may be a crushed zone and a source of the fines. The original well obtained most of its water from the dolomite underlying this zone.

Solution channels may exist almost anywhere in this well. No large ones were visible in the section logged, but they could exist below the 265 foot level.

Short of drilling a new well, the recommended procedure from here is -

1. Examine the silt for any possible diagnostic features which may identify its source.

2. If the source cannot be identified:

a) Set a seal below the joint at the six foot level
and run a pump test.

b) If the silt persists, then straighten the bend at
six feet and set the seal below the "decomposed
granite" at 320 feet more or less.

Ex. of silt showed

Araganite

Selenite

Doubly. turn. Quartz

2. It is the policy of the Commission

to maintain the highest standards of

conduct and to ensure that the Commission

is at all times a body of

men of high character and integrity

and that the Commission is

composed of men of high

character and integrity

and that the Commission

is composed of men of high

character and integrity

FIGURE 1

LOG OF WELL

(Data taken from a handwritten record received from the Thruway Authority)

Diameter of well	8"
Depth of well	490'
12-inch casing*	13.5'
8-inch casing	103.8'
Surface to 8'	Soil and gravel
8' to 12'	Silt and gravel
12' to 88'	Fissured limestone with large seams of gravel, silt and clay
88' to 101'	Yellow silt
103' to 164'	Hard limestone
164' to 281'	Limestone
281' to 297'	Sandstone
297' to 318'	Decomposed granite
319' to 490'	Dolomite

Aquifer - Rock

Static water level	50' below surface
Water yield	1486 GPM at 105'
Draw down pumping time	39 hours

* The upper eight feet of the casing as placed was cut off when the pumphouse was installed.

- FIGURE 1 -

(Data taken from a handwritten record received from the Thruway Authority)

8"	Diameter of well
490'	Depth of well
13.2'	13-inch casing*
103.8'	8-inch casing
Soil and gravel	Surface to 8'
Silt and gravel	8' to 12'
Fractured limestone with large seams of gravel, silt and clay	12' to 28'
Yellow silt	28' to 101'
Hard limestone	103' to 104'
Limestone	104' to 261'
Sandstone	261' to 297'
Decomposed granite	297' to 318'
Dolomite	319' to 490'

Apulter - Rock

Static water level 30' below surface

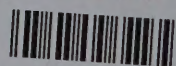
Water yield 1450 GPM at 102'

Draw down pumping time 39 hours

* The upper eight feet of the casing as placed was cut off

when the pump house was installed.

00978



LRI